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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/979,547	11/20/2001	Ken Ishihara	SAEGU95.001A	5022

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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

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DATE MAILED: 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/979,547

Applicant(s)

ISHIHARA ET AL.

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1 - 11, drawn to a reversible electromagnetic wave shielding knitted material.

Group II, claim(s) 12 - 17, drawn to an apparatus for measuring and evaluating electromagnetic wave shielding capability.

2. The special technical feature of Group I is a composite knitted material comprising a conductive yarn on the surface side and a natural fiber yarn as the back side. The forgoing special technical feature is shown in the prior art of Norio (Claim and page 4, lines 16 – 20). Therefore, there is not contribution made over the prior art. Hence, there is no unity of invention and lack of unity is held by the Examiner.

3. During a telephone conversation with Karoline Delaney on June 26, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1 - 11.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 12 – 17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

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currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Regarding claims 3 and 4, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). For the sake of examination at the present time, the Examiner will assume any comparable fiber, method, resin or metal is acceptable.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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9. Claims 1, 2, 4, 5 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Norio (JP A2 04-054165).

As to claim 1, Norio teaches a electromagnetic wave-shielding garment which is knitted that has an ordinary fiber having an excellent hygrosopicity on one side of the fabric and a fiber plated with metal having excellent electro conductivity on the other side (Claim). In the translation of the patent application supplied by the United States Patent and Trademark Office, the ordinary fiber, or “natural fiber yarn”, can be cotton (page 4, lines 16 – 20).

As to claim 2, Norio teaches that the garment is knitted but gives no indication as to the type of knitted structure. It is the Examiner’s position that the garment can be a plain knitted structure.

As to claim 4, Norio teaches that the conductive fiber yarn can be a stainless steel thread (claim, line 3), equated to Applicant’s “fine wire”.

As to claim 5, Norio teaches that the “natural fiber yarn” can be cotton which is a purely natural yarn (page 4, lines 16 – 20).

As to claim 11, Norio teaches that the electromagnetic garment is used as a undergarment (page 1, lines 6 – 8).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Norio (JP A2 04-054165).

Norio teaches that the conductive fiber yarn can be mixed yarn which is plated with metal (page 3, lines 6 – 14). It should be noted that the use of mixed yarn implies a multifilament yarn. In one embodiment, the conductive yarn comprises a conductive metal electroplated on the surface of an acrylic long fiber yarn (page 4, lines 16 – 20).

Norio discloses the claimed invention except for that the denier is 2 to 8. It should be noted that the denier is a result effective variable. For example, as the denier increases, the yarn becomes stronger but less flexible. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a yarn with a denier of 2 to 8 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the denier in order to have an appropriately strong and flexible yarn to create a knitted material.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Norio (JP A2 04-054165) in view of Akopian et al. (US 5,968,854).

Norio teaches the claimed invention except fails to disclose that the conductive yarn structure is a silver-plated nylon yarn.

Akopian teaches an EMI shielding fabric comprising silver-coated nylon yarns (Abstract).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to use silver-coated nylon yarns as suggested by Akopian as the conductive yarn of Norio motivated by the fact that silver is not irritating to the skin, non-toxic, non-carcinogenic and has bactericidal properties (column 3, lines 25 – 40).

Norio in view of Akopian discloses the claimed invention except for that the denier of the silver-plated nylon is 70 to 210 and the natural fiber yarn has a count of 30 to 150. It should be noted that the denier is a result effective variable. For example, as the denier increases, the yarn becomes stronger but less flexible. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a yarn with a the denier of the silver-plated nylon is 70 to 210 and the natural fiber yarn has a count of 30 to 150 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the denier in order to have an appropriately strong and flexible yarn to create a knitted material.

Although Norio in view of Akopian does not explicitly teach the claimed KES hand value of at least 6 and electromagnetic wave shielding capability of at least 20 dB, it is reasonable to presume that KES hand value of at least 6 and electromagnetic wave shielding capability of at least 20 dB is inherent to Norio in view of Akopian. Support for said presumption is found in the use of like materials (i.e. a knitted fabric with a silver-nylon yarn on one side and a natural fiber yarn on the other side) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of KES hand value of at least 6 and electromagnetic wave shielding capability of at

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least 20 dB would obviously have been present once the Norio in view of Akopian product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

13. Claims 7 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norio (JP A2 04-054165) in view of Christiansen et al. (US 4,398,277).

Norio teaches the claimed invention except fails to teach that the conductive yarn is interknitted with a elastic fiber yarn as required by claim 7. Norio fails to teach that the elastic fiber yarn is a single-covered or double-covered yarn comprising a polyurethane thread as a stuffing thread covered with a nylon thread as required by claim 8 and that the yarn has a denier of about 10 to 200 as required by claim 9. Norio fails to teach that the proportion of elastic fiber yarn is greater than 0 but not greater than $\frac{2}{3}$ the total amount of conductive fiber yarn and elastic fiber yarn interknitted with each other as required by claim 10.

Christiansen et al. teaches a fabric and body strap having both electrically conductive and elastomeric properties (Abstract). In one preferred embodiment, the fabric is knit together utilizing a electrically conductive yarn and an insulative yarn. The insulative yarn can comprise a 200 denier texturized nylon plaited over a 184 denier bare spandex (column 4, lines 37 – 63). The proportion of elastic fiber yarn to the total amount of yarn, using denier, is less than $\frac{2}{3}$ as required by the Applicant.

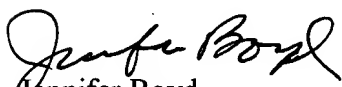
It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the elastic yarn of Christiansen to interknit with the conductive yarn of Norio motivated by the desire to have a readily expansible material which maintains its elasticity over repeated usage and is breathable thus comfortable to the user (column 6, lines 34 – 41).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
June 26, 2003

